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Farid Adrangi

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EXAMINER

O CONNOR, BRIAN T

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/723,813	<b>Applicant(s)</b> ADRANGI ET AL.	
	<b>Examiner</b> Brian T. O'Connor	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 19-25, 30, and 31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

**With respect to claims 19 and 30**, each independent claim recites “a machine-accessible medium” while the specification (paragraph [0031]) states that the “machine-accessible medium” is defined as carrier waves, infrared signals, etc. This subject matter (carrier waves, infrared signals) is not one of the statutory categories of invention; it is not a process, machine, manufacture, or a composition of matter. It is a form of energy and thus does not fall within one of the statutory categories.

**With respect to claims 19 and 30**, each independent claim recites “a machine-accessible medium”; this is not viewed as statutory subject matter because the medium cannot be combined with a computer to perform a method or process. Amendments to the claims to recite a “computer-readable medium” would overcome this rejection. The Examiner suggests the Applicant review the “Interim Guidelines for Statutory Subject Matter” published in the Official Gazette on November 22, 2005.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuan (US 6,496,704) in view of Perkins (Perkins, "IP Mobility Support for IPv4", RFC3344, IETF, August 2002) and further in view of Magret (US 6,856,624).

**With respect to claims 1 and 10**, Yuan discloses a system and technique for mobile systems (24 of Figure 1; column 1, lines 45-54; where the mobile system is viewed as equivalent to a mobile node) to register in an internal network (22 of Figure 1) or an external network (32 of Figure 1) by using a DHCP server (column 5, lines 14-20; where the mobile node must issue a DHCP request to obtain an address). The mobile system or host will send a registration request from a home agent or HA with the HA address (100 of Figure 5) and then register with the HA (MOBILE HOST, HA, 90 of Figure 4).

Yuan fails to disclose extensions with the registration reply that identify the HA as part of an internal network or an external network.

Perkins discloses a mobile IP registration reply with extensions (section 3.4, pg 33; UDP header diagram, pg 34) and three different types of extension: Mobile-Home (32), Mobile-Foreign (33), and Foreign-Home (34) (sections 3.5.2, 3.5.3, 3.5.4, pg 37-38).

Perkins realizes the advantage of increased security by using security parameters, authenticators, and extension types with a registration reply (first paragraph, pg 37). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the extensions of Perkins with the system and method of Yuan.

Yuan also fails to disclose examining the registration reply to identify an extension and determining if the mobile node/system is on an internal network or an external network.

Magret, in an invention of Mobile IP registration, discloses a mobile node that receives a registration reply (122 of Figure 7) and examines the reply to decide if a foreign agent was the sender (128 of Figure 7; column 9, line 66 – column 10, line 7). One of ordinary skill in the art would realize the same procedure would be used to decide if the reply arrived from an external or internal network.

Magret realizes the advantage of avoiding duplicate and ambiguous IP address by checking whether the registration reply is from a foreign (external) agent. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use this method of Magret with the system and method of Yuan.

**With respect to claims 2 and 11**, Yuan further discloses the HA is in the home or internal network (70, 62 of Figure 3).

Yuan fails to disclose an extension as an internal registration reply extension or an external registration reply extension.

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Perkins discloses a mobile IP registration reply with extensions (section 3.4, pg 33; UDP header diagram, pg 34) and three different types of extension: Mobile-Home (32), Mobile-Foreign (33), and Foreign-Home (34) (sections 3.5.2, 3.5.3, 3.5.4, pg 37-38).

Perkins realizes the advantage of increased security by using security parameters, authenticators, and extension types with a registration reply (first paragraph, pg 37). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the extensions of Perkins with the system and method of Yuan.

**With respect to claims 3 and 12**, Yuan further discloses that the mobile system or node may be on a home or internal network (62 of Figure 3) or a foreign or external network (64 of Figure 3).

Yuan fails to disclose an extension as an internal registration reply extension or an external registration reply extension.

Perkins discloses a mobile IP registration reply with extensions (section 3.4, pg 33; UDP header diagram, pg 34) and three different types of extension: Mobile-Home (32), Mobile-Foreign (33), and Foreign-Home (34) (sections 3.5.2, 3.5.3, 3.5.4, pg 37-38).

Perkins realizes the advantage of increased security by using security parameters, authenticators, and extension types with a registration reply (first paragraph, pg 37). Thus it would have been obvious to one of ordinary skill in the art at

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the time of the invention to use the extensions of Perkins with the system and method of Yuan.

**With respect to claims 4 and 13**, Yuan further discloses an MDIS device (152 of Figure 7) which acts as an encapsulation device for protocol tunneling. Yuan describes this technique and system as a virtual private network (VPN) connection (column 11, line 60 – column 12, line 8) and it must include a registration reply with a VPN address to the mobile unit can perform the encapsulation of data packets.

**With respect to claims 5 and 14**, Yuan further discloses that when the mobile unit (118 of Figure 8) is using a default HA on an external network (154 of Figure 8) then the encapsulation and VPN technique is used (162, 166 of Figure 8) and the mobile unit must store the VPN address for the external home agent in order to conduct the encapsulation technique.

**With respect to claims 6 and 15**, Yuan further discloses that the mobile unit can move to an external network (118, 112, 138 of Figure 6) and continue to issue DHCP requests (column 5, lines 14-20; where the mobile node must issue a DHCP request to obtain an address) that reply with addresses for additional HAs.

Yuan fails to disclose that the mode unit will register with a second HA if the registration fails for a first HA attempt.

Perkins discloses that when an mobile node has multiple HA addresses and if the first registration fails then the mobile node will try to register with the next HA address (first paragraph, pg 26).

One of ordinary skill in the art would realize the benefit of greater connectivity for mobile units by continuing to attempt registration in the even of one failure. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use this method of Perkins with the system and method of Yuan.

**With respect to claims 7 and 16**, Yuan further discloses a situation where the second home agent is an foreign or external home agent (178 of Figure 9).

**With respect to claims 8 and 17**, Yuan further discloses that when the mobile node (118 of Figure 7) is in an external network (112 of Figure 7) and the HA uses an internal address (154 of Figure 7), an MDIS device (152 of Figure 7) which acts as an encapsulation device is used for protocol tunneling. Yuan describes this technique and system as a virtual private network (VPN) connection (column 11, line 60 – column 12, line 8). Yuan also discloses using a secure connection with CDPD protocol (Figure 9; column 2, lines 46-58).

**With respect to claims 9 and 18**, Yuan further discloses completing registration (Figure 4) with the secure CPDP protocol (Figure 9; column 2, lines 46-58).

5. Claims 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuan in view of Perkins in view of Magret and further in view of Kumar et al. (US 7,085,279 hereafter Kumar).

**With respect to claim 19**, Yuan discloses a method for mobile systems (24 of Figure 1; column 1, lines 45-54; where the mobile system is viewed as equivalent to a mobile node) to register in an internal network (22 of Figure 1) or an external network (32 of Figure 1) by using a DHCP server (column 5, lines 14-20; where the mobile node



must issue a DHCP request to obtain an address). The mobile system or host will send a registration request from a home agent or HA with the HA address (100 of Figure 5) and then register with the HA (MOBILE HOST, HA, 90 of Figure 4).

Yuan fails to disclose extensions with the registration reply that identify the HA as part of an internal network or an external network.

Perkins discloses a mobile IP registration reply with extensions (section 3.4, pg 33; UDP header diagram, pg 34) and three different types of extension: Mobile-Home (32), Mobile-Foreign (33), and Foreign-Home (34) (sections 3.5.2, 3.5.3, 3.5.4, pg 37-38).

Perkins realizes the advantage of increased security by using security parameters, authenticators, and extension types with a registration reply (first paragraph, pg 37). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the extensions of Perkins with the system and method of Yuan.

Yuan also fails to disclose examining the registration reply to identify an extension and determining if the mobile node/system is on an internal network or an external network.

Magret, in an invention of Mobile IP registration, discloses a mobile node that receives a registration reply (122 of Figure 7) and examines the reply to decide if a foreign agent was the sender (128 of Figure 7; column 9, line 66 – column 10, line 7). One of ordinary skill in the art would realize the same procedure would be used to decide if the reply arrived from an external or internal network.

Magret realizes the advantage of avoiding duplicate and ambiguous IP address by checking whether the registration reply is from a foreign (external) agent. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use this method of Magret with the system and method of Yuan.

Yuan fails to disclose a computer or machine readable medium with instructions to perform his method.

Kumar, in the same field of endeavor, discloses a computer readable medium storing a program to perform a connection setup over a packet network in conjunction with a switching network. The computer-readable medium is an electronic, magnetic, optical, or other physical device or means that can be contain or store a computer program for use by or in connection with a computer-related system or method (column 7, lines 51-67). One skilled in the art would have clearly recognized that the method of Yuan would have been implemented in a software module. The implemented software would perform the function with less expense and more flexibility. Therefore, it would have been obvious to have used the technique in Yuan and implement it as taught by Kumar in order to reduce cost and improve the adaptability and flexibility of the networking system.

**With respect to claim 20**, Yuan further discloses the HA is in the home or internal network (70, 62 of Figure 3).

Yuan fails to disclose an extension as an internal registration reply extension or an external registration reply extension.

Perkins discloses a mobile IP registration reply with extensions (section 3.4, pg 33; UDP header diagram, pg 34) and three different types of extension: Mobile-Home (32), Mobile-Foreign (33), and Foreign-Home (34) (sections 3.5.2, 3.5.3, 3.5.4, pg 37-38).

Perkins realizes the advantage of increased security by using security parameters, authenticators, and extension types with a registration reply (first paragraph, pg 37). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the extensions of Perkins with the method of Yuan.

**With respect to claim 21**, Yuan further discloses that the mobile system or node may be on a home or internal network (62 of Figure 3) or a foreign or external network (64 of Figure 3).

Yuan fails to disclose an extension as an internal registration reply extension or an external registration reply extension.

Perkins discloses a mobile IP registration reply with extensions (section 3.4, pg 33; UDP header diagram, pg 34) and three different types of extension: Mobile-Home (32), Mobile-Foreign (33), and Foreign-Home (34) (sections 3.5.2, 3.5.3, 3.5.4, pg 37-38).

Perkins realizes the advantage of increased security by using security parameters, authenticators, and extension types with a registration reply (first paragraph, pg 37). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the extensions of Perkins with the method of Yuan.

**With respect to claim 22**, Yuan further discloses an MDIS device (152 of Figure 7) which acts as an encapsulation device for protocol tunneling. Yuan describes this technique and system as a virtual private network (VPN) connection (column 11, line 60 – column 12, line 8) and it must include a registration reply with a VPN address to the mobile unit can perform the encapsulation of data packets.

**With respect to claim 23**, Yuan further discloses that when the mobile unit (118 of Figure 8) is using a default HA on an external network (154 of Figure 8) then the encapsulation and VPN technique is used (162, 166 of Figure 8) and the mobile unit must store the VPN address for the external home agent in order to conduct the encapsulation technique.

**With respect to claim 24**, Yuan further discloses that the mobile unit can move to an external network (118, 112, 138 of Figure 6) and continue to issue DHCP requests (column 5, lines 14-20; where the mobile node must issue a DHCP request to obtain an address) that reply with addresses for additional HAs.

Yuan fails to disclose that the mode unit will register with a second HA if the registration fails for a first HA attempt.

Perkins discloses that when a mobile node has multiple HA addresses and the first registration fails then the mobile node will try to register with the next HA address (first paragraph, pg 26) in the group of HA addresses.

One of ordinary skill in the art would realize the benefit of greater connectivity for mobile units by continuing to attempt registration in the even of one failure. Thus it

would have been obvious to one of ordinary skill in the art at the time of the invention to use this method of Perkins with the method of Yuan.

**With respect to claim 25**, Yuan further discloses a situation where the second home agent is an foreign or external home agent (178 of Figure 9).

**With respect to claim 26**, Yuan further discloses that when the mobile node (118 of Figure 7) is in an external network (112 of Figure 7) and the HA uses an internal address (154 of Figure 7), an MDIS device (152 of Figure 7) which acts as an encapsulation device is used for protocol tunneling. Yuan describes this technique and system as a virtual private network (VPN) connection (column 11, line 60 – column 12, line 8). Yuan also discloses using a secure connection with CDPD protocol (Figure 9; column 2, lines 46-58).

**With respect to claim 27**, Yuan further discloses completing registration (Figure 4) with the secure CPDP protocol (Figure 9; column 2, lines 46-58).

6. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuan in view of Perkins.

**With respect to claim 28**, Yuan discloses a technique for mobile systems (24 of Figure 1; column 1, lines 45-54; where the mobile system is viewed as equivalent to a mobile node) where a HA receives a registration request (90, HA of Figure 4) and issues a registration reply (100 of Figure 5).

Yuan fails to disclose extensions with the registration reply that identify the HA as part of an internal network or an external network.

Perkins discloses a mobile IP registration reply with extensions (section 3.4, pg 33; UDP header diagram, pg 34) and three different types of extension: Mobile-Home (32), Mobile-Foreign (33), and Foreign-Home (34) (sections 3.5.2, 3.5.3, 3.5.4, pg 37-38).

Perkins realizes the advantage of increased security by using security parameters, authenticators, and extension types with a registration reply (first paragraph, pg 37). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the extensions of Perkins with the method of Yuan.

**With respect to claim 29**, Yuan fails to disclose accepting the mobile node if the mobile node is on an internal network and rejecting the mobile node if the mobile node is on an external network.

Perkins discloses a registration agent that will reject a registration request if the mobile node is from an external (foreign) network and accept the registration request if the mobile node is part on an internal (home) network (section 3.7.2, second paragraph, pg 49).

Perkins realizes the advantage of greater security by having a registration agent check if a mobile node is part of a trusted network with a security association (first paragraph, pg 49). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the extensions of Perkins with the method of Yuan.

7. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuan in view of Perkins and further in view of Kumar.

**With respect to claim 30**, Yuan discloses a technique for mobile systems (24 of Figure 1; column 1, lines 45-54; where the mobile system is viewed as equivalent to a mobile node) where a HA receives a registration request (90, HA of Figure 4) and issues a registration reply (100 of Figure 5).

Yuan fails to disclose extensions with the registration reply that identify the HA as part of an internal network or an external network.

Perkins discloses a mobile IP registration reply with extensions (section 3.4, pg 33; UDP header diagram, pg 34) and three different types of extension: Mobile-Home (32), Mobile-Foreign (33), and Foreign-Home (34) (sections 3.5.2, 3.5.3, 3.5.4, pg 37-38).

Perkins realizes the advantage of increased security by using security parameters, authenticators, and extension types with a registration reply (first paragraph, pg 37). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the extensions of Perkins with the method of Yuan.

Yuan fails to disclose a computer or machine readable medium with instructions to perform his method.

Kumar, in the same field of endeavor, discloses a computer readable medium storing a program to perform a connection setup over a packet network in conjunction with a switching network. The computer-readable medium is an electronic, magnetic, optical, or other physical device or means that can be contain or store a computer program for use by or in connection with a computer-related system or method (column 7, lines 51-67). One skilled in the art would have clearly recognized that the method of

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Yuan would have been implemented in a software module. The implemented software would perform the function with less expense and more flexibility. Therefore, it would have been obvious to have used the technique in Yuan and implement it as taught by Kumar in order to reduce cost and improve the adaptability and flexibility of the networking system.

**With respect to claim 31**, Yuan fails to disclose accepting the mobile node if the mobile node is on an internal network and rejecting the mobile node if the mobile node is on an external network.

Perkins discloses a registration agent that will reject a registration request if the mobile node is from an external (foreign) network and accept the registration request if the mobile node is part on an internal (home) network (section 3.7.2, second paragraph, pg 49).

Perkins realizes the advantage of greater security by having a registration agent check if a mobile node is part of a trusted network with a security association (first paragraph, pg 49). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use the extensions of Perkins with the method of Yuan.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. O'Connor whose telephone number is 571-270-1081. The examiner can normally be reached on 9:00AM-6:30PM, M-F, 1st Friday off.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian T. O'Connor  
May 8, 2007



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